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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,707	02/26/2002	Gabor Devenyi	01W123	6371

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Raytheon Company
Bldg. EO/E01/E150
2000 East El Segundo Boulevard
P.O. Box 902
El Segundo, CA 90245

EXAMINER

PAK, SUNG H

ART UNIT PAPER NUMBER

2874

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,707

Applicant(s)

DEVENYI, GABOR

Examiner

Sung H. Pak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

All references submitted in the information disclosure statement have been considered by the examiner. Please refer to PTO-1449 enclosed herewith.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. *It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited.* The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-7, 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gooley (US 4,119,860) in view of Query (US 4,860,551).

Query reference was cited in the information disclosure statement.

Gooley reference discloses an optical device with all the limitations set forth in the claims, except it does not teach the use of a transverse surface notch on the optical fibers.

Specifically Gooley reference discloses: a fiber optic liquid level sensor comprising at least two optical fibers, each solid conductors having an outer light confining cladding inherent in optical fibers (column 2 lines 43-48); the fibers containing discontinuity of sufficient size to interfere with light transmission when the discontinuity does not contact the liquid (abstract); a support that positions the discontinuity of each of the at least two optical fibers at a location corresponding to a different height above the bottom of the volume (Fig. 1A); a light source which introduces light into the first end of the each of the optical fibers (Fig. 1A); a light detector which receives light that has been introduced into each of the optical fibers and has traveled through the respective optical fibers at least as far as one of the discontinuities of the respective optical fibers (Fig. 1A); wherein the light detector comprises an electrical device (column 7 lines 10-22);

Query reference, on the other hand, explicitly teaches the use of fiber notches as discontinuities in a fiber sensor arrangement (Fig. 4). Such fiber notches are advantageous because they allow for highly sensitive detection of change in light

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transmission characteristics which then increases the sensitivity of the sensor device (column 7 line 9- column 8 line 18). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Gooley device to have fiber notches.

Claims 2, 3, 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gooley (US 4,119,860) in view of Vasel (US 3,120,125).

Gooley reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of a non-electrical light detector structure.

Vasel reference on the other hand, explicitly teaches the use of a non-electrical light detector (light diffuser having visual indication of liquid level) in liquid level detecting device (Fig. 1). Such a light detector is advantageous because it allows for simple and cost effective light detecting component. Also, because it requires no electrical power such a detector is advantageous in sensing flammable liquid level detection. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Gooley device to have non-electrical light detector as disclosed in Vasel.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gooley (US 4,119,860) in view of Vali et al (US 5,164,608).

Gooley reference discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach a light detector disposed at the first end of an optical fiber, and a reflector disposed at the second end of the fiber.

Vali et al reference, on the other hand, explicitly discloses a light source and a light detector disposed on the first end of the fiber optic liquid level sensor and a reflector disposed at the second end of the fiber (Fig. 3). Such an arrangement is advantageous since it allows for a compact and efficient fiber optic sensor design. Since the light source can be disposed proximate to the light detector, both of these components can be packaged together as a single unit. In addition, since the light is transmitted and returned via the same fiber, less amount of optical fiber is required. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Gooley device to have a light detector disposed at the first end of the optical fiber, and a reflector disposed at the second end of the fiber.

Conclusion

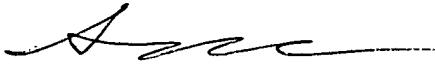
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US005235179A, US003713338, US004994682 disclose fiber optic liquid level sensors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (703) 308-4880. The examiner can normally be reached on Monday - Thursday : 6:30am-5:00pm.

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The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Sung H. Pak
Examiner
Art Unit 2874

sp



Rodney Bovermick
Supervisory Patent Examiner
Technology Center 2800